

SECTION 03 54 19
CAST-IN-PLACE NORMAL WEIGHT ARCHITECTURAL CONCRETE

Addendum 2 - March 19, 2009

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cast-in-place concrete, cement, aggregates, water and admixtures.

1.2 REFERENCES

- A. ACI 301 - Specifications for Structural Concrete for Buildings.

1.3 SUBMITTALS

- A. Concrete Mix Designs: Submit mix design for each type and strength of concrete. Proportion designs in accordance with "Proportioning on the Basis of Field Experience and/or Trial Mixtures" of ACI 318.

PART 2 PRODUCTS

2.1 REINFORCEMENT

- A. Reinforcing Bars: ASTM A615, Grade 60, deformed.
- B. Plain-Steel Welded Wire Fabric: ASTM A185, fabricated from as-drawn ASTM A 82 plain-steel wire into flat sheets, rolls are not permitted.

2.2 CURING AND SEALING MATERIALS

- A. Manufacturers: Subject to compliance with the requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, those listed below.
- B. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- C. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.
- D. (CS-1) Clear, Non-residual, Waterborne, Membrane-Forming Curing Compound: Apply in accordance with manufacturer's recommendations and at coverage rate meeting ASTM C309, Type 1, Class B, 18 to 22 percent solids. To be used at contractor's option in lieu of moist cure, in accordance with ACI 301, for floors not receiving other surface treatments.

2.3 CONCRETE MATERIALS

- A. Portland Cement: ASTM C150, Type I, corresponding to cement on which selection of concrete proportions was based. Use same brand for each required type of concrete.
- B. Normal Weight Concrete Aggregates: ASTM C33, uniformly graded. Do not use aggregates containing soluble salts or other substances which can cause stains on exposed surfaces.
- C. Water: ASTM C94. Fresh, clean, potable.

2.4 ADMIXTURES

- A. Subject to compliance with the requirements, products that may be incorporated into the Work shall comply with the standards listed below:
1. Air-Entraining Admixtures: ASTM C260.
 2. Water Reducing Admixtures: ASTM C494, Type A.

2.5 BONDING COMPOUNDS

- A. Bonding Compound: ASTM C1059, Type II non-redispersible, acrylic emulsion or styrene butadiene. Use to bond toppings to base slab.

2.6 UNDERLAYMENTS

- A. Self-Leveling Underlayment: Use as leveling coat where required.
1. Levelex by L & M.
 2. Ardex K15 by Ardex.
 3. Leverlayer III; by Dayton Superior. (ADD 2)
 4. Latilevel 86; by Laticrete International. (ADD 2)
 5. Or equivalent. (ADD 2)
- B. Underlayment (non-self-leveling):
1. Duratop by L & M.
 2. Thoro Underlayment by Thoro System Products.
 3. Set Latex Cement by Master Builders.
 4. Sikatop 122 by Sika.
 5. Or equivalent. (ADD 2)

2.7 NORMAL WEIGHT CONCRETE MIXES

- A. General: Manufacture and deliver concrete in accordance with ASTM C94. Proportion lightweight structural concrete according to ACI 301.
- B. Minimum Compressive Strength: 3500 PSI.
- C. Air Entrainment: Lightweight concrete shall contain 6 percent entrained air with maximum tolerance of plus or minus 1.5 percent.
- D. Maximum Slump: 4 inches without super-plasticizer, 7 inches after addition of super-plasticizer.

PART 3 EXECUTION

3.1 REINFORCEMENT INSTALLATION

- A. Clean steel reinforcement to remove loose rust and mill scale, earth, ice and other foreign materials which will reduce or destroy bond with concrete.
- B. Position, support, and secure steel reinforcement against displacement by formwork, construction, or concrete placement operations.

3.2 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301.
- B. Comply with ACI 301 for installation of concrete topping mixtures.
- C. Bond concrete toppings placed over concrete slabs to base slabs using bonding compound. Install in accordance with manufacturer's instructions.

3.3 FINISHING FLOORS AND SLABS

- A. Finish bare concrete floors (adjacent to floors with other surfacing) so concrete surface is level with other finishes, unless otherwise noted.
- B. (CONC FIN-1) Trowel Finish: Apply a trowel finish to monolithic slab surfaces exposed to view and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or another thin film-finish coating system.

3.4 CONCRETE CURING AND PROTECTION

- A. Provide curing and protection immediately after placement in accordance with ACI 301.

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